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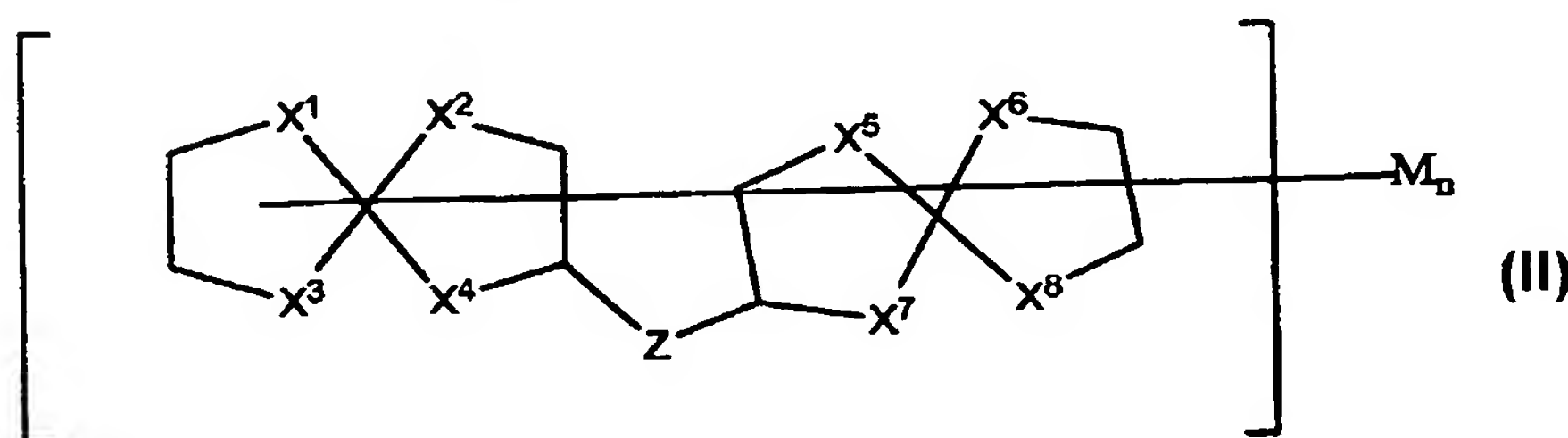
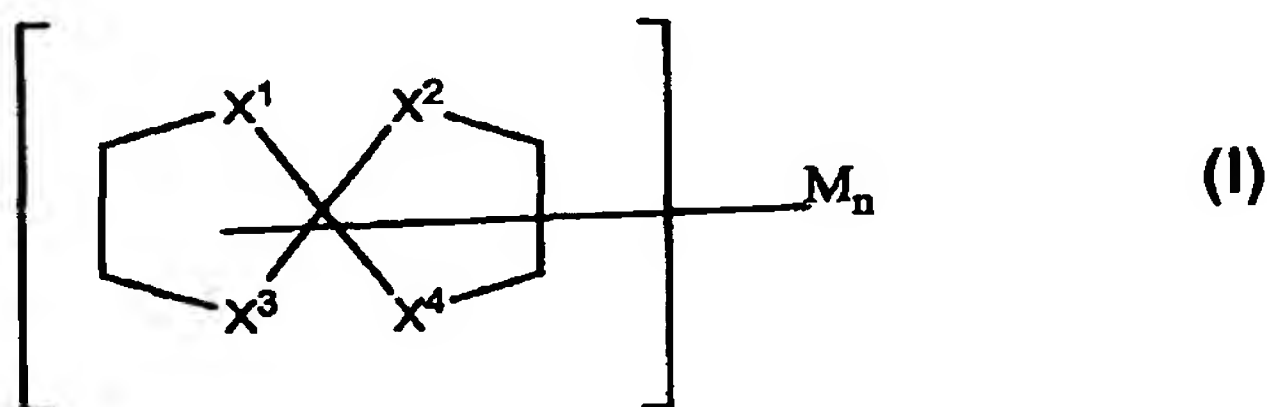
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(54) Title: SPIROTETRATHIOCARBAMATES AND SPIROOXOTHIOCARBAMATES



(57) Abstract: Spirotetrathiocarbamates (STOCs) or oxa substituted compounds (SOTOCs) of Formula (I): (Formula (I)) or bis-STOC or bisSOTOC compounds of Formula (II): (Formula (II)) wherein  $X^1$ ,  $X^2$ ,  $X^3$ ,  $X^4$ ,  $X^5$ ,  $X^6$ ,  $X^7$ , and  $X^8$ , are independently O or S; and preferably at least two and up to all four of  $X^1$ ,  $X^2$ ,  $X^3$  and  $X^4$ , and at least two and up to all four of  $X^5$ ,  $X^6$ ,  $X^7$ , and  $X^8$  are sulfur; Z is  $-C_mR^{2m}_{2m}$  wherein  $m = 1$  to 4;  $-C(R^2)_2SC(R^2)_2-$ ,  $C(R^2)_2SSC(R^2)_2-$ , or  $-C(R^2)_2OC(R^2)_2-$ ;  $n$  is from 0 to 4; M is selected from  $CH_2Cl$ ,  $CH_2SC(O)R^1$ ,  $CH_2SC(S)R^1$ ,  $CH_2S(CH_2CH_2S)_qH$  wherein  $q$  is 0, 1 or 2;  $-CR^2=CH_2$ ,  $-CH_2OC(O)CR^2=CH_2$ ,  $CH_2N=C=S$ ,  $CH_2N=C=O$ ,  $CH_2NR^2H$ ,  $CH_2OH$ ,  $CH_2SCH_2CH_2CR^2=CH_2$ , phenyl,  $C(R^2)$  phenyl, furan, thiophene, halogen,  $C_3$ - $C_6$  cycloalkyl,  $C_3$ - $C_6$  heterocyclics, thiol, H, (III) or (IV) wherein A is S, O or phenyl;  $x$  is 0 or 1;  $R^1$  is  $C_1$ - $C_{22}$  alkyl; and  $R^2$  is H or  $C_1$ - $C_{22}$  alkyl have excellent optical properties. Methods for preparing these compositions and optical lenses prepared from the compounds are also provided.



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